



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

DELIMITATION OF THE SPELLING PROBLEM

JOHN A. LESTER

The Hill School, Pottstown, Pennsylvania

The present object of those concerned in teaching spelling in schools and colleges is, first, to gain efficiency, and, secondly, to gain time. The spelling problem as it presents itself in practice is three-fold. It is, first, to determine as exactly as possible what words the student misspells; secondly, to determine how, in the main, he goes about misspelling them; and thirdly, to determine by what means he may be induced to spell them correctly. In other words, in this pathological condition we must first establish the extent and limits of the malady, next proceed to its diagnosis, and so to the remedy.

MATERIAL

The average written vocabulary of a boy or girl of eighteen is about 3,000 words. Of those 3,000, the words which are frequently misspelled amount to not more than 1,000. For the basis of this study two such lists of 1,000 have been used.

1. The 1,000 words most frequently misspelled in College Board examinations. This list is based on the books of some 1,400 candidates of from seventeen to eighteen years of age who have written examinations in English in the last five years.

2. The 1,000 words most frequently misspelled at the Hill School. This list is the result of the digested records of fifteen years, or the misspellings in some 11,000,000 written words of the ordinary vocabulary of 1,160 boys of the average age of seventeen to eighteen.¹

¹ It should be said that some 60 words which find prominent place in our school spellers have been eliminated from both lists. These are words like *development*, *judgment*, *lovable*, *marvelous*, in which good usage allows a variant form. The College Board is clearly right in recognizing the variant as correct, and spelling-book writers would do well to print such words in a separate group together with the variant form. Only such words out of this group have been included in the lists as have shown, by practical tests, some inherent difficulty or crux unaffected by the variant spelling.

It might be expected that the two lists would be found to differ rather widely, in that the College Board examinations of recent years have given wider scope for expository writing on subjects more or less technical. But the divergence is not great; 709 words are common to both lists, so that the full total of 2,000 words of the combined lists is reduced to 1,291 words commonly misspelled by boys and girls of seventeen to eighteen years of age. These two lists were studied separately in the endeavor to determine where the difficulty lies and how it may be eradicated.

HOW ARE THESE WORDS MISPELLED?

Hitherto the practice has been to classify words according to their difficulty in the mind, not of the student, but of the teacher. Spelling-book writers have put words where they thought they belonged a priori. We should seek rather the boy's view of the matter. With this object in view, every word occurring in either list was dictated (without previous preparation) at different times to an aggregate of forty students, with the object of discovering where the crucial difficulty lay. The errors were carefully compared and tabulated, and words showing a common cause of error were grouped together.

The results are interesting and useful in view of our present methods of teaching spelling. Four of the best recent spelling books, which chance to be before me, print the well-known rule about the doubling of the single consonant which is preceded by the single vowel, etc., as an aid to the spelling of such words, as *omitted*, *omitting*, *inference*, etc. But the rule misses the point. The crux of these words with the boy is clearly established by test to be in the single *m* in the first two, and in the *e*, not *a*, in the last syllable of the third. Again, the spelling books take for granted that the rule for *ei*, *ie*, will help in the spelling of such words as *mischievous*, oblivious of the fact that the crux is in the suffix; and direct attention to the prefixes of such words as *attendant*, *irresistible*, not knowing that the boy's difficulty is, again, in the suffix.

Indeed, when the teacher's point of view is thus exchanged for the pupil's, the usual spelling rules must be revised. In one of the most recent spellers intended for the use of high-school pupils

there are fourteen rules given. Two of them, taken at random, are the following: "The plurals of nouns ending in *s*, *sh*, *ch* (soft), *x*, or *z*, and the third person singular present indicative of verbs with the same endings, are formed by adding *es* to the root." This rule applies to *only 2 words* (*approaches* and *gases*) of the 1,000 in the school list, and *gases* is an exception to another of the fourteen rules! The rule applies to *only 4 words* in the College Board list (*approaches*, *gases*, *sandwiches*, *wishes*). The value of this rule, expressed in average percentages is thus 0.3. Another rule reads, "Nouns ending in *o* preceded by a consonant add *es*, preceded by a vowel add *s*, to form the plural. Some words of foreign origin, ending in *o* preceded by a consonant, add only *s* to form the plural." This rule applies to 4 words of the 1,000 in the school list—namely, *echoes*, *heroes*, *negroes*, *potatoes*. It applies to 5 words in the College Board list—*echoes*, *heroes*, *mementos*, *mosquitoes*, *torpedoes*—2 of them belonging to the school list. Thus the value of this rule expressed in average percentages is .045. The student is required to learn two rules, containing in all 72 words, in order to enable himself to spell 11 words. Clearly our boys do not misspell at all in the way they should!

Now, in our endeavor to discover what are the students' difficulties in the words contained in our two lists and in grouping these misspelled words according to primary causes, we must remember two constant factors which the lists illustrate but do not measure. These are the misspellings due to errors in word-compounding and in the form of the possessive case; and these misspellings, though constantly occurring, are sporadic, and in the lists of words frequently misspelled are represented only here and there by such forms as *every thing*, *to-gether*, *her's*. But the records show that 9 per cent of total misspellings are due to mistakes in word-compounding, and 8.8 per cent are due to mistakes in the form of the possessive. In other words, over 18 misspelled words out of every 100 are due to these two causes.

In measuring quantitatively the influence of a particular cause of misspelling we may take first the number of words out of the 1,000 of each list assignable to that cause. The results may be

conveniently given in the form of a table. The proportion is expressed by a percentage.

TABLE I

	Word- Compounding	Possessive	Mispronunciation	Confusion of Words of Similar Sound	Prefixes and Suffixes	Final Consonant before a Suffix	<i>ei, ie</i>	Final <i>e</i> before a Suffix	Final <i>y</i>
School list	9.0	8.0	12.2	10.0	3.4	2.0	2.7	2.7	1.2
College Board list.	9.5	8.9	11.0	8.7	4.1	3.7	2.4	4.1	2.9

But a more just quantitative measure would be the proportion, not of the 1,000 words, but of the aggregate misspellings represented by that 1,000 words. For example, in the school list we have the 1,000 words most frequently misspelled. But the list represents a total of some 10,000 acts of misspelling, beginning at the top with *too*, misspelled 69 times, and scaling downward. Similarly the College Board list of 1,000 words represents some 5,000 acts of misspelling.¹ The proportion of such total misspellings attributable to a specific cause is given in Table II.

TABLE II

	Word- Compounding	Possessive	Mispronunciation	Confusion of Words of Similar Sound	Prefixes and Suffixes	Final Consonant before a Suffix	<i>ei, ie</i>	Final <i>e</i> before a Suffix	Final <i>y</i>
School list	9.2	8.4	12.8	12.0	3.4	2.8	3.4	2.2	1.6
College Board list.	9.6	9.2	12.5	13.0	3.9	3.7	3.8	3.5	2.6

It is remarkable to find such a close approximation of results, not only between the school list and that of the College Board, but between the two tables. In Table III the average is struck of the figures for the two lists in Table II.

¹ But in any given piece of writing the same word misspelled several times counts but once.

The figures in Table III, then, may be said to represent quantitatively the causes of 59 per cent of the misspellings of students of seventeen to eighteen years of age.

TABLE III

	Word- Compounding	Possessive	Mispronunciation	Confusion of Words of Similar Sound	Prefixes and Suffixes	Final Consonant before a Suffix	<i>ei, ie</i>	Final <i>e</i> before a Suffix	Final <i>y</i>	Total Percentage
Average of school and College Board list...	9.4	8.8	12.7	12.5	3.7	3.3	3.6	2.9	2.1	59.0

The results show us that the most important single cause of misspelling is mispronunciation. This is a fact of the utmost importance for teachers to recognize. Of 1,000 words, the learning of whose form we refer to certain rules, about 120 are misspelled because the pupil habitually mispronounces them. Such are *dissipate*, *perform*, *recognize*, *temporary*.

A second cause of almost equal importance is the confusion of the forms of words of similar sound. Hence arises some 13 per cent of the total misspellings of pupils entering college. These two causes, together with mistakes in word-compounding and possessives, account for more than 43 per cent of the total misspellings. Compared with them, all other causes shrink into insignificance. Especially does the value of many rules completely disappear. One of the spellers referred to above prints twelve rules as a guide to pupils; two print fourteen rules; another prints twenty-seven. How much of the spelling problem do these twenty-seven rules solve, even granted that they are perfectly learned and properly applied? Subjected to test, the sum total of the twenty-seven show an applicability to a little under 17 per cent of the words and about 16.5 per cent of the total misspellings. Of this percentage, five of the twenty-seven rules, slightly modified, show an applicability to 15 per cent of the words, and 14.5 per cent of the misspelling. The conclusion is obvious: we should be teaching, not twenty-seven rules, nor fourteen, nor

twelve, but five. These five rules in order of usefulness are the following:

1. The rule explaining prefixes and suffixes.
2. The rule for *ei*, *ie*.
3. The rule for the doubling of a final consonant.
4. The rule for changes of a final *y*.
5. The rule for final *e* before a suffix.

The degree of their usefulness may be seen from Table III.

Our problem is now how to teach the 59 per cent of misspellings which seem to point to a remedy available, and how to teach the other 41 per cent which do not fall by test into any of the groups enumerated.

HOW MAY THESE WORDS BE TAUGHT?

Here also we are giving the results of classroom experience. The 120 words whose misspelling is due to mispronunciation may be taught by removing the cause: by connecting the form with the sound, by causing pupils to revert to the old practice of pronouncing the word with the greatest distinctness before and after spelling it. It does not fall within the province of this paper to discuss the increase of efficiency in spelling which may result from a greater appeal to the auditory memory of pupils of seventeen to eighteen years of age. It is sufficient to say that the most desperate cases of cacographitis can sometimes be cured by a very simple prescription—one hour a day spent in reading aloud. The words which are confused one with another also may be taught by removing the cause; by connecting the form with the meaning, and by writing from dictation sentences which contain them. In the case of trouble with prefixes and suffixes, whether the pupil knows Latin or not, it is advisable to teach thoroughly the thirteen prefixes and suffixes involved, the agglutinative principle, and the consonantal changes resulting. The instructor should also compass the main principles of word-compounding and should recapitulate the principles of the English possessive case. He should give ample practice for employing them in exercises in dictation; for the individual experience of every writer reinforces the result of classroom tests to show that mistakes in possessives are due to carelessness rather than ignorance.

There has raged a controversy over the value of formal spelling rules. In the study of *The Child and His Spelling*, by Cook and O'Shea, the student's conscious or unconscious use of rules is adduced as proof of their value. And the result of the investigation is that "not a single rule tested proved to be of value." Now the value of rules is not to be sought in the evidence of students who, as was the case of those investigated, had never really learned them. It is to be sought in the applicability of the rules to the problem in hand. The five rules given above solve about 18 per cent of the whole problem. Hence students should learn these rules as necessary tools with which to perform a piece of work. In learning Latin a pupil is required to memorize and absolutely to acquire the rule that the dative is used with *sum* to denote the possessor, the thing possessed being the subject. In learning German the student is required to learn that the prepositions *aus*, *bei*, *mit*, *nach*, *von*, and *zu* take the dative. When it is found that the student has not learned them, one does not impugn the rules, but one rebukes the student for not furnishing himself with proper tools. Nor is it in order to say that the Latin and German rules are absolute and without exception (even if such were the case), whereas the English rule is not. The five rules referred to can be so stated, exceptions and all, as to cover the whole ground under survey—namely, the 1,000 words most frequently misspelled—and that is the whole function of rules. The writer's experience is at absolute variance with the experience set forth by Cook and O'Shea. Students were required to memorize the five rules absolutely; and it was pointed out to them that the reason for this memorization was exactly the same as in the case of the memorization of the rule for finding the hypotenuse of a right triangle, or the rule for solving a quadratic, namely, they were merely acquiring a tool ready at hand to use, and, having acquired the tool, they should use it. Eight weeks later the 75 students were asked to write a candid unsigned statement as to whether they found the rules learned useful; 85 per cent replied "yes" to this question. This conclusion does not bear out the statement that "not a single rule tested proved to be of value."

One suspects that the prevailing opinion that formal spelling rules are useless is due to the method in which they are taught.

Henry Suzzallo in *The Teaching of Spelling* writes of the modern method:

In the first place spelling rules are now taught inductively. When the children have mastered enough individual cases to afford a basis for generalization, the rule is adduced by the child from his own knowledge. The better books do not call for the memorization of many rules, with numerous exceptions, followed by a study of more or less unfamiliar illustrations. The teacher is quite content when the child merely senses the general principles, and refrains from any verbal formulation of the rule.¹

This practice would seem to be fairly conducive to the result discovered by Cook and O'Shea, in which not a single rule was found to be of value. How many examination books written for college entrance are clearly the work of pupils who "sense general principles"—and cannot spell! Wherein lies the virtue in attempting inductive teaching when there is no *rationale* for induction? There is no logical relation to be unveiled between the phenomena observed and an actuating principle, for such does not exist. There is no logical relation between a group of words and a mnemonic for spelling them. And that is all spelling rules are—mnemonics. Just as we say, "Remember the *o* of *capitol* by the round dome," so we say, "You will escape the prevalent misspelling of every word in this group if you learn this rule or jingle; and the rule or jingle as stated applies without exception throughout the whole 1,000 words you commonly misspell."

Finally, how are we to approach the 41 per cent of words which do not fall within any group so far mentioned? They are best taught, in general, by calling sharp attention to the crux of each word at the time it is learned. For more than one-third of these words such a crux can be proved to exist. The proper attack is, not to call attention to the prevalent misspelling, as is done in some of our spellers ("repetition, not repitition"), but to call attention to the letter or syllable which forms the stumbling-block in the word: (repetition [*pet*]). Further, in this 41 per cent of the misspellings, other groups may conveniently be made. Thus, if the 20 most frequently misspelled words which do not fall into any of the foregoing classes are grouped together, it will be found that they

¹P. 90.

represent another 10 per cent of the total misspellings. Then again, there is a group of 13 words of the 1,000 in which the crucial point is *sc*—a stumbling-block for the students who know no Latin (*ascertain*, *conscience*, *crescent*, etc.); another small group is constantly misspelled because of inattention or mental obliquity (*convenient*, *crowded*, *diary*, *studying*, etc.); another group in which the misspelling is due to a vain attempt to spell an unusual word as it is pronounced (*courteous*, *cupboard*, *extraordinary*, etc.); another group of words frequently misspelled by the erroneous addition or misplacement of the apostrophe (*can't*, *don't*, *its*, etc.); and finally a certain group of words which a student misspells because of the influence of his studies in other languages. Such forms as *affaires*, *remarquable*, *officier*, etc., are common enough to warrant co-operation from the French department; and the omission of the capital from *Jew*, *Latin*, *French*, *English*, etc., is usually an accompaniment of the first years in German. By means of these six small and arbitrary groups, words having a common error may be associated in the student's mind, and the methodization of the spelling problem extended to 76 per cent of the whole, immeasurably increasing the effectiveness of our attack.

But the problem is, not only to gain efficiency, but also to save time. At present time is wasted chiefly because we draw no sharp line between what our students have learned and what they have still to learn in spelling. It is taught repetitiously, and not progressively. But it is obviously easy to devise a method by which, whether the 1,000 words are presented to the class in lists or in the text of dictated sentences, words are eliminated from the list as fast as the entire class knows them. Thus when the first review begins the list of 1,000 has shrunk, say, to 750; at the second review, to 500, and so on; both master and pupil keeping individual and personal record.

The method indicated above has been found of great practical value in solving the vexed question of spelling in preparatory schools. It is adaptable to various needs, presupposing only that the body of words to be learned has been definitely determined, and that both master and pupil acknowledge the importance of correct spelling. To judge by the books written for acceptance by the

College Board, this recognition of the importance of correct spelling is by no means universal. The Board states that eight misspellings are as a rule sufficient to cause a candidate to fail. The average number of misspellings is more than five; and the main cause of these misspellings is sometimes ignorance, sometimes defective vision, but most often *sheer carelessness*. It has been necessary in the papers of 1915 and 1916 for the candidate to copy certain sentences from the printed paper into his examination book. *One out of every six candidates* presenting themselves for admission to college was unable to copy these words without writing one or more of them incorrectly!

Granted a will to teach and a will to learn, granted a definite body of words to be mastered, with a rational method of discovering and removing misspellings, experience shows that the greater part of the spelling problem may be solved with a substantial reduction of the effort and time now expended.